Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for processing an initial image of coronary arteries, the initial image given by an intensity function I(x,y) defined on a set of pixels (x,y), so as to produce a processed image of the coronary arteries having an intensity function I'(x,y), comprising ~~steps of~~:

(a) obtaining a function z(x,y) ~~describing~~ bounding a heart surface ~~over~~ within the initial image; and

(b) calculating the intensity function I' based upon the function z.

2. (original) The method according to Claim 1, wherein the function z(x,y) describes an ellipsoidal surface over the initial image.

3. (currently amended) The method according to Claim ~~2~~ 1 wherein the ellipsoidal surface has a first axis and a second axis coinciding with ~~the~~ a length and width, respectively, of the heart in the initial image, and a third axis perpendicular to the image.

4. (original) The method according to Claim ~~3~~ 2 wherein the third axis has a predetermined constant times the length of the first or second axis.

5. (original) The method according to Claim ~~4~~ 3 wherein the predetermined constant is from about 0.3 to about 0.8 times the length of the first axis.

5. **(currently amended)** The method according to Claim 1 wherein I'(x,y) is given by the following algebraic expression

$$I'(x,y)=\left[\frac{z(x,y)}{\alpha}+1\right]I(x,y)\,,$$

wherein α is a predetermined constant.

6. **(original)** The method according to Claim 5, wherein α is from about 0.1 to about 5.

7. **(currently amended)** A method for processing a first initial digital image of coronary arteries and a second initial digital image of the coronary arteries, the first and second digital images having been obtained from different perspectives of the arteries, ~~so as to produce a first processed image and a second processed image,~~ the method comprising ~~steps of~~:

(a) processing the first initial digital image by the method of Claim 1 so as to produce a first processed image; and

(b) processing the second digital image by the method of Claim 1 so as to produce a second processed image.

8. **(currently amended)** The method according to Claim 7 further comprising ~~a step of~~ presenting the first and second processed images for stereoscopic viewing.

9. **(currently amended)** A computer program product comprising a computer useable medium having computer readable program code embodied therein for processing an initial image of coronary arteries, the initial image given by an intensity function I(x,y) defined on a set of pixels (x,y), so as to produce a processed image of the coronary arteries having an

intensity function I'(x,y), the computer program product comprising:

computer readable program code for causing the computer to obtain a function z(x,y) ~~describing~~ bounding a heart surface ~~over~~ within the initial image; and

computer readable program code for causing the computer to calculate the intensity function I' based upon the function z[,] .

11. (currently amended) A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for processing a first initial digital image of coronary arteries and a second initial digital image of the coronary arteries, the first and second digital having been obtained from different perspectives of the coronary arteries, ~~so as to produce a first processed image and a second processed image,~~ the method comprising ~~steps of~~:

(a) processing the first initial digital image by the method of Claim 1 so as to produce a first processed image; and

(b) processing the second digital image by the method of Claim 1 so as to produce a second processed image.

12. (currently amended) A computer program product comprising a computer useable medium having computer readable program code embodied therein for processing a first initial digital image of coronary arteries and a second initial digital image of the coronary arteries, the first and second digital images having been obtained from different perspectives of the coronary arteries, ~~so as to produce a~~

~~first processed image and a second processed image,~~ the computer program product comprising:

computer readable program code for causing the computer to process the first initial digital image by the method of Claim 1 so as to produce a first processed image; and

computer readable program code for causing the computer to process the second digital image by the method of Claim 1 so as to produce a second processed image.

12.

13. (New) A method for processing a single image of coronary arteries, the single image having an intensity function I(x,y) defined on a set of pixels (x,y), so as to produce a pseudo 3-dimensional image of a patient's heart, the method comprising:

(a) obtaining a function z(x,y) corresponding to a boundary surrounding a surface of the patient's heart within said image; and

(b) calculating an intensity function I'(x,y) of all pixels within said boundary based upon the function z so that pixel intensity is indicative of a depth of respective pixels constituting the coronary arteries.

14. (New) The method according to Claim 13, wherein the function z(x,y) describes an ellipsoidal surface over the single image.

13.

15. (New) The method according to Claim 12 or 13, wherein the ellipsoidal surface has a first axis and a second axis coinciding with a length and width, respectively, of the patient's heart in the image, and a third axis perpendicular to the image.

14.

16. **(New)** The method according to Claim 15, wherein the third axis has a predetermined constant times the length of the first or second axis.

15.

17. **(New)** The method according to Claim 16, wherein the predetermined constant is from about 0.3 to about 0.8 times the length of the first axis.

16.

18. **(New)** The method according to Claim 13, wherein I'(x,y) is given by the following algebraic expression:

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$$I'(x,y)=\left[\frac{z(x,y)}{\alpha}+1\right]I(x,y)\,,$$

wherein α is a predetermined constant.

17.

19. **(New)** The method according to Claim 18, wherein α is from about 0.1 to about 5.

18.

20. **(New)** A method for processing a first initial digital image of coronary arteries and a second initial digital image of the coronary arteries, the first and second digital images having been obtained from different perspectives of the arteries, the method comprising:

(a) processing the first initial digital image by the method of Claim 12 so as to produce a first processed image; and

(b) processing the second digital image by the method of Claim 12 so as to produce a second processed image.

9.

21. **(New)** The method according to Claim 20 further comprising presenting the first and second processed images for stereoscopic viewing.

20.

22. **(New)** A program storage device readable by machine, tangibly embodying a program of instructions executable by the

machine to perform method steps for processing a single image of coronary arteries, the single image having an intensity function I(x,y) defined on a set of pixels (x,y), so as to produce a pseudo 3-dimensional image of a patient's heart, the method comprising:

(a) obtaining a function z(x,y) corresponding to a boundary surrounding a surface of the patient's heart within said image; and

(b) calculating an intensity function I'(x,y) of all pixels within said boundary based upon the function z so that pixel intensity is indicative of a depth of respective pixels constituting the coronary arteries.

23. (New) A computer program product comprising a computer useable medium having computer readable program code embodied therein for processing a single image of coronary arteries, the single image having an intensity function I(x,y) defined on a set of pixels (x,y), so as to produce a pseudo 3-dimensional image of a patient's heart, the computer program product comprising:

computer readable program code for causing the computer to obtain a function z(x,y) corresponding to a boundary surrounding a surface of the patient's heart within said image; and

computer readable program code for causing the computer to calculate an intensity function I'(x,y) of all pixels within said boundary based upon the function z so that pixel intensity is indicative of a depth of respective pixels constituting the coronary arteries.